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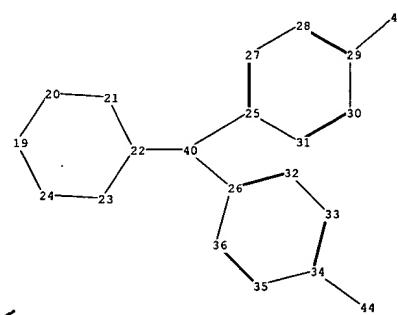
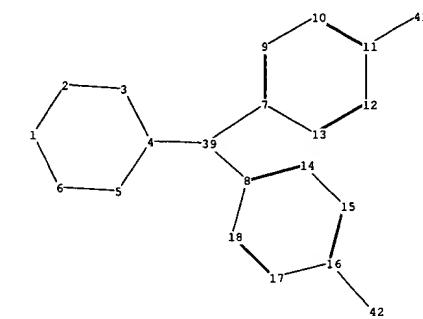
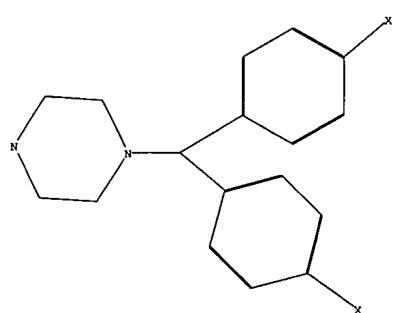
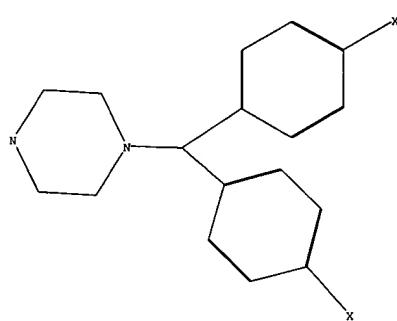
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7/22/02



chain nodes :
 39 40 41 42 43 44

ring nodes :
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
 26 27 28 29 30 31 32 33 34 35 36

chain bonds :
 4-39 7-39 8-39 11-41 16-42 22-40 25-40 26-40 29-43 34-44

ring bonds :
 1-2 1-6 2-3 3-4 4-5 5-6 7-13 7-9 8-18 8-14 9-10 10-11 11-12 12-13 14-15
 15-16 16-17 17-18 19-20 19-24 20-21 21-22 22-23 23-24 25-31 25-27 26-36 26-32
 27-28 28-29 29-30 30-31 32-33 33-34 34-35 35-36

exact/norm bonds :
 1-2 1-6 2-3 3-4 4-5 4-39 5-6 19-20 19-24 20-21 21-22 22-23 22-40 23-24

exact bonds :
 7-39 8-39 11-41 16-42 25-40 26-40 29-43 34-44

normalized bonds :
 7-13 7-9 8-18 8-14 9-10 10-11 11-12 12-13 14-15 15-16 16-17 17-18 25-31
 25-27 26-36 26-32 27-28 28-29 29-30 30-31 32-33 33-34 34-35 35-36

isolated ring systems :
 containing 7 : 25 :

G1:C,N

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom
 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom 20:Atom 21:Atom
 22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom 31:Atom
 32:Atom 33:Atom 34:Atom 35:Atom 36:Atom 39:CLASS 40:CLASS 41:CLASS 42:CLASS
 43:CLASS 44:CLASS

=> d ibib hitstr 1-

YOU HAVE REQUESTED DATA FROM 4 ANSWERS - CONTINUE? Y/ (N) :Y

L10 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:411089 CAPLUS

DOCUMENT NUMBER: 136:167350

TITLE: Synthesis of

N,N'-di(3-aminodithiocarboxylic)propionyl piperazine

AUTHOR(S): Guo, Bao-guo; Zhang, Yong-xin; Liu, Ying

CORPORATE SOURCE: Dept. of Chem., Shangqiu Teachers College, Shangqiu, 476000, Peop. Rep. China

SOURCE: Shangqiu Shizhuan Xuebao (2001), 17(2), 89-92

CODEN: SSXUFU; ISSN: 1008-2662

PUBLISHER: Shangqiu Shizhuan Xuebao Bianjibu

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

OTHER SOURCE(S): CASREACT 136:167350

IT 396101-68-1P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); BIOL (Biological study); PREP

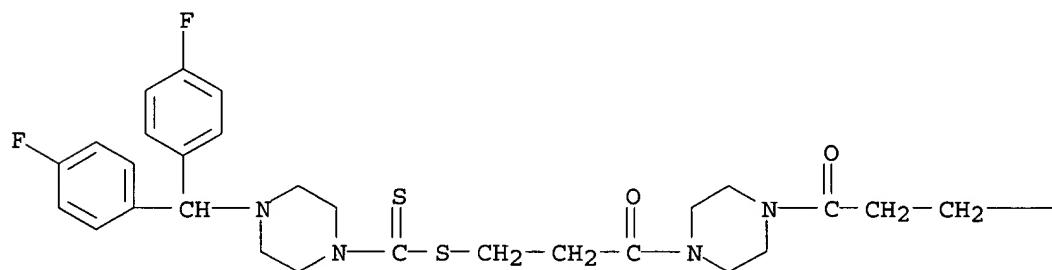
(Preparation)

(synthesis of N,N'-di(aminothiocarbonylthio)propionylpiperazines)

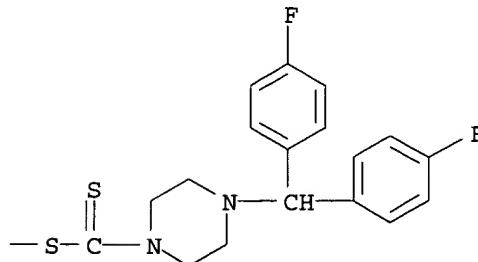
RN 396101-68-1 CAPLUS

CN 1-Piperazinecarbodithioic acid, 4-[bis(4-fluorophenyl)methyl]-, 1,4-piperazinediylbis(3-oxo-3,1-propanediyl) ester (9CI) (CA INDEX NAME)

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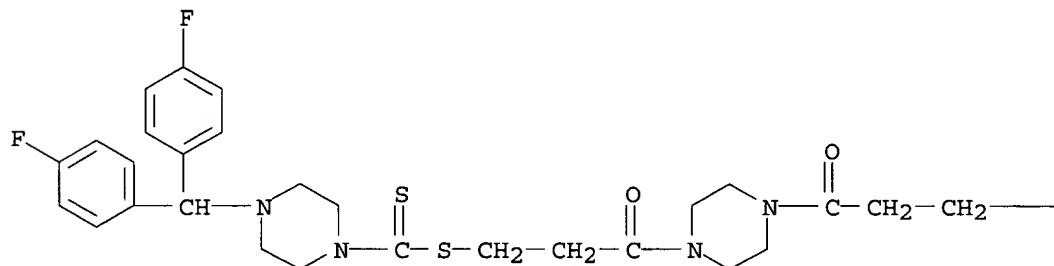
PAGE 1-B



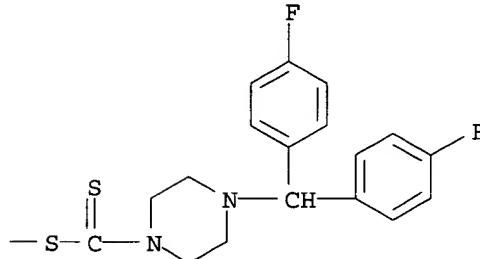
L10 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:368470 CAPLUS
 DOCUMENT NUMBER: 136:167349
 TITLE: Synthesis and anti-tumor activities of
 1,4-bis[3-(amino-
 dithiocarboxy)propionyl]piperazine derivatives
 AUTHOR(S): Guo, Baoguo; Ge, Zemei; Cheng, Tieming; Li, Runtao
 CORPORATE SOURCE: School of Pharmaceutical Sciences, Beijing
 University, Beijing, 100083, Peop. Rep. China
 SOURCE: Yaoxue Xuebao (2001), 36(3), 185-187
 CODEN: YHHPAL; ISSN: 0513-4870
 PUBLISHER: Yaoxue Xuebao Bianjibu
 DOCUMENT TYPE: Journal
 LANGUAGE: Chinese
 OTHER SOURCE(S): CASREACT 136:167349
 IT 396101-68-1P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (synthesis and anti-tumor activities of
 1,4-bis[3-(amino-dithiocarboxy)propionyl]piperazine derivs.)
 RN 396101-68-1 CAPLUS
 CN 1-Piperazinecarbodithioic acid, 4-[bis(4-fluorophenyl)methyl]-,
 1,4-piperazinediylbis(3-oxo-3,1-
 propanediyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

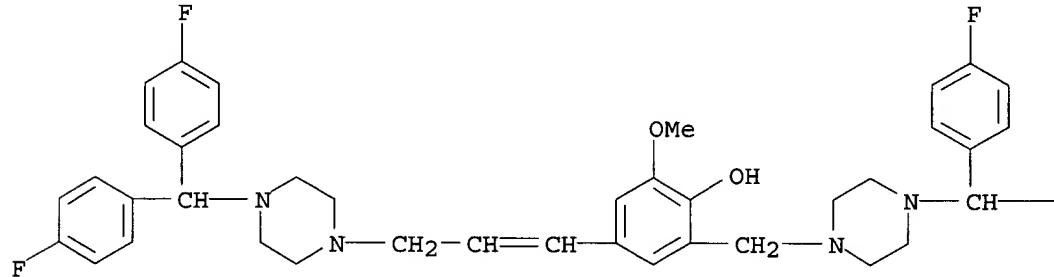


L10 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 1988:492454 CAPLUS
 DOCUMENT NUMBER: 109:92454
 TITLE: Cinnamylamines useful as radical scavengers, etc., a
 process for their preparation,

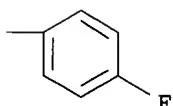
and pharmaceutical compositions containing them
 INVENTOR(S): Menta, Ernesto; Spinelli, Silvano; Gandolfi, Carmelo
 A.; Frigerio, Marco; Tofanetti, Odoardo; Tognella, Sergio
 PATENT ASSIGNEE(S): Boehringer Biochemia Robin S.p.A., Italy
 SOURCE: Eur. Pat. Appl., 19 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|------------------|-----------------|----------|
| EP 266549 | A1 | 19880511 | EP 1987-114175 | 19870929 |
| EP 266549 | B1 | 19910619 | | |
| R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE AT 64589 E 19910715 AT 1987-114175 19870929 | | | | |
| PRIORITY APPLN. INFO.: | | | IT 1986-21857 | 19860930 |
| | | | EP 1987-114175 | 19870929 |
| OTHER SOURCE(S): | | MARPAT 109:92454 | | |
| IT 115688-65-8P 115688-66-9P 115688-76-1P | | | | |
| RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation) (prepn. of, as drug) | | | | |
| RN 115688-65-8 | CAPLUS | | | |
| CN Phenol, | 2-[[4-[bis(4-fluorophenyl)methyl]-1-piperazinyl]methyl]-4-[3-[4-[bis(4-fluorophenyl)methyl]-1-piperazinyl]-1-propenyl]-6-methoxy- (9CI) (CA INDEX NAME) | | | |

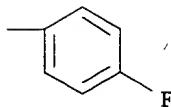
PAGE 1-A



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PAGE 1-B

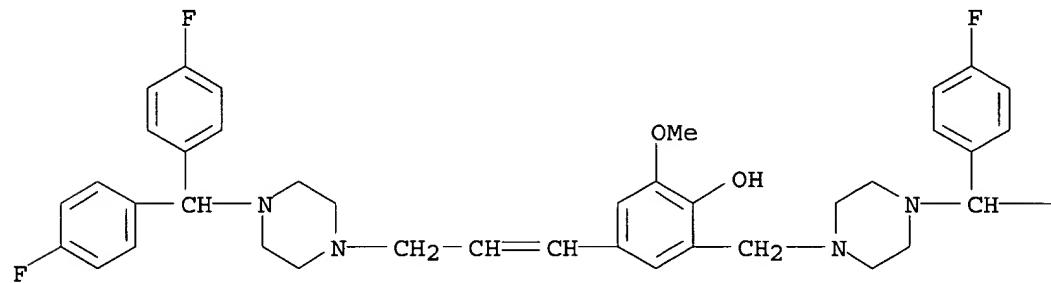


RN 115688-66-9 CAPLUS

CN Phenol,

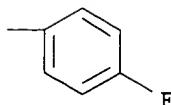
2-[[4-[bis(4-fluorophenyl)methyl]-1-piperazinyl]methyl]-4-[3-[4-[bis(4-fluorophenyl)methyl]-1-piperazinyl]-1-propenyl]-6-methoxy-, tetrahydrochloride (9CI) (CA INDEX NAME)

PAGE 1-A



● 4 HCl

PAGE 1-B



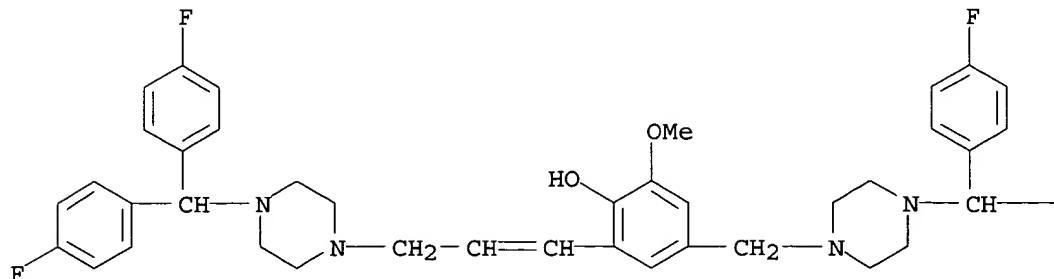
RN 115688-76-1 CAPLUS

CN Phenol,

4-[[4-[bis(4-fluorophenyl)methyl]-1-piperazinyl]methyl]-2-[3-[4-[bis(4-fluorophenyl)methyl]-1-

piperazinyl]-1-propenyl]-6-methoxy-, tetrahydrochloride (9CI) (CA INDEX
NAME)

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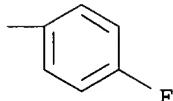


● 4 HCl

$$m=1 \quad u(H)$$

X_1 = bond
 g_1 = a Me^+ ~~and~~ have

PAGE 1-B



1. ~~isobut~~
2. ~~Subst. alkene~~
~~3. alkene (C=C)~~
~~4. - bond~~

L10 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1985:78912 CAPLUS
DOCUMENT NUMBER: 102:78912
TITLE: Bis(piperazinyl- or -homopiperazinyl)alkanes
INVENTOR(S): Devlin, John P.; McNeil, Daniel W.; Keirns, James
J.; Barsumian, Edward L.
PATENT ASSIGNEE(S): Boehringer Ingelheim Ltd., USA
SOURCE: Eur. Pat. Appl., 53 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|----------|
| EP 122488 | A1 | 19841024 | EP 1984-102979 | 19840317 |
| EP 122488 | B1 | 19890607 | | |
| R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE | | | | |
| AT 43843 | E | 19890615 | AT 1984-102979 | 19840317 |

| | | | | |
|------------------------|----|----------|-----------------|----------|
| FI 8401081 | A | 19840922 | FI 1984-1081 | 19840319 |
| FI 80269 | B | 19900131 | | |
| FI 80269 | C | 19900510 | | |
| DK 8401601 | A | 19840922 | DK 1984-1601 | 19840320 |
| DK 166022 | B | 19930301 | | |
| DK 166022 | C | 19930802 | | |
| NO 8401078 | A | 19840924 | NO 1984-1078 | 19840320 |
| NO 162907 | B | 19891127 | | |
| NO 162907 | C | 19900307 | | |
| AU 8425891 | A1 | 19840927 | AU 1984-25891 | 19840320 |
| AU 568122 | B2 | 19871217 | | |
| HU 34016 | O | 19850128 | HU 1984-1102 | 19840320 |
| HU 191599 | B | 19870330 | | |
| DD 219642 | A5 | 19850313 | DD 1984-261058 | 19840320 |
| ES 530762 | A1 | 19850616 | ES 1984-530762 | 19840320 |
| ZA 8402037 | A | 19851224 | ZA 1984-2037 | 19840320 |
| CA 1218652 | A1 | 19870303 | CA 1984-450025 | 19840320 |
| PL 141127 | B1 | 19870630 | PL 1984-246774 | 19840320 |
| IL 71291 | A1 | 19871130 | IL 1984-71291 | 19840320 |
| CS 254971 | B2 | 19880215 | CS 1984-1960 | 19840320 |
| JP 59176265 | A2 | 19841005 | JP 1984-54152 | 19840321 |
| ES 535438 | A1 | 19850916 | ES 1984-535438 | 19840827 |
| ES 535439 | A1 | 19850916 | ES 1984-535439 | 19840827 |
| ES 535440 | A1 | 19850916 | ES 1984-535440 | 19840827 |
| SU 1568887 | A3 | 19900530 | SU 1986-4027076 | 19860312 |
| SU 1574174 | A3 | 19900623 | SU 1986-4027087 | 19860312 |
| CS 254998 | B2 | 19880215 | CS 1986-5529 | 19860721 |
| PRIORITY APPLN. INFO.: | | | US 1983-477008 | 19830321 |
| | | | EP 1984-102979 | 19840317 |
| | | | CS 1984-1960 | 19840320 |

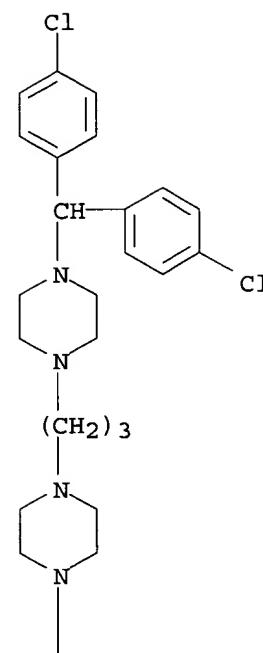
IT **94637-59-9P**

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of, as antiallergy-antiinflammatory agent)

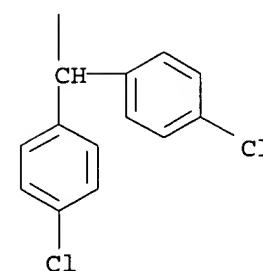
RN 94637-59-9 CAPLUS

CN Piperazine, 1,1'-(1,3-propanediyl)bis[4-[bis(4-chlorophenyl)methyl]-, dihydrochloride (9CI) (CA INDEX
NAME)

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●2 HCl

=>

=> d his

(FILE 'HOME' ENTERED AT 16:04:22 ON 22 JUL 2002)

FILE 'REGISTRY' ENTERED AT 16:04:38 ON 22 JUL 2002

FILE 'STNGUIDE' ENTERED AT 16:05:59 ON 22 JUL 2002

FILE 'REGISTRY' ENTERED AT 16:08:35 ON 22 JUL 2002

1 S L1

L1 STRUCTURE UPLOADED
L2 1 S L1
L3 5 S L1 FULL

L4 FILE 'CAPLUS, MEDLINE, USPATFULL' ENTERED AT 16:09:40 ON 22 JUL 2002
2 S L3

L4 2 S L3

FILE 'REGISTRY' ENTERED AT 16:13:41 ON 22 JUL 2002

L5 STRUCTURE UPLOADED

L6 50 S L5

L7 STRUCTURE UPLOADED

L8 0 S L7

19 8 S 17 EUL

17.11.3.15 10:22

FILE 'CAPLUS.ME'

970 S. L. 10

31 S L11 AND L11K

112 21 S ETI AND LINKER
113 20 DUB REM 113 (1 DUPLICATE REMOVED)

113 20 DUP REM E12 (1 DUPLICATE REMOVED)
114 123 S L11 AND (BIS OR DIMER OR DIMERIC)

L14 123 S LII AND (BIS OR DIMER OR L
L15 123 S LII AND (DIMER OR DIMERIC)

L15 17 S L11 AND (DIMER OR DIMERIC)
L16 22 S L11 AND (COULLENTE (2A) LINKS)

L16 22 S L11 AND (COVALENT? (3A) LINK?)

=>

L4 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2002 ACS
 ACCESSION NUMBER: 1992:194367 CAPLUS
 DOCUMENT NUMBER: 116:194367
 TITLE: Preparation of
 hydrocarbylenebis[(benzothiazepinonyloxy)carbonyl] derivatives as
 vasodilators
 INVENTOR(S): IdB Holding S.p.A.; Nizzola, Rita; Malandrino,
 Salvatore
 PATENT ASSIGNEE(S): IDB Holding S.p.A., Italy
 SOURCE: Eur. Pat. Appl., 9 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|-------------------|----------|-----------------|----------|
| EP 467537 | A2 | 19920122 | EP 1991-305594 | 19910620 |
| EP 467537 | A3 | 19920219 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE | | | | |
| US 5120730 | A | 19920609 | US 1991-713788 | 19910612 |
| CA 2044834 | AA | 19911222 | CA 1991-2044834 | 19910618 |
| PRIORITY APPLN. INFO.: | | | GB 1990-13878 | 19900621 |
| OTHER SOURCE(S): | MARPAT 116:194367 | | | |

L4 ANSWER 2 OF 2 USPATFULL
 ACCESSION NUMBER: 92:47056 USPATFULL
 TITLE: Benzothiazepine esters, their preparation and
 formulations for therapeutic use
 INVENTOR(S): Pifferi, Giorgio, Milan, Italy
 Nizzola, Rita, Milan, Italy
 Malandrino, Salvatore, Milan, Italy
 PATENT ASSIGNEE(S): IdB Holding SpA, Milan, Italy (non-U.S. corporation)

| PATENT INFORMATION: | NUMBER | KIND | DATE |
|---------------------|----------------|------|--------------|
| APPLICATION INFO.: | US 5120730 | | 19920609 |
| | US 1991-713788 | | 19910612 (7) |

| PRIORITY INFORMATION: | NUMBER | DATE |
|--|--|----------|
| DOCUMENT TYPE: | GB 1990-13878 | 19900621 |
| FILE SEGMENT: | Utility | |
| PRIMARY EXAMINER: | Granted | |
| LEGAL REPRESENTATIVE: | Bond, Robert T. | |
| NUMBER OF CLAIMS: | Kirschstein, Ottinger, Israel & Schiffmiller | |
| EXEMPLARY CLAIM: | 8 | |
| LINE COUNT: | 1 | |
| CAS INDEXING IS AVAILABLE FOR THIS PATENT. | | |

=> d hitstr 1-
 YOU HAVE REQUESTED DATA FROM 2 ANSWERS - CONTINUE? Y/ (N) :y

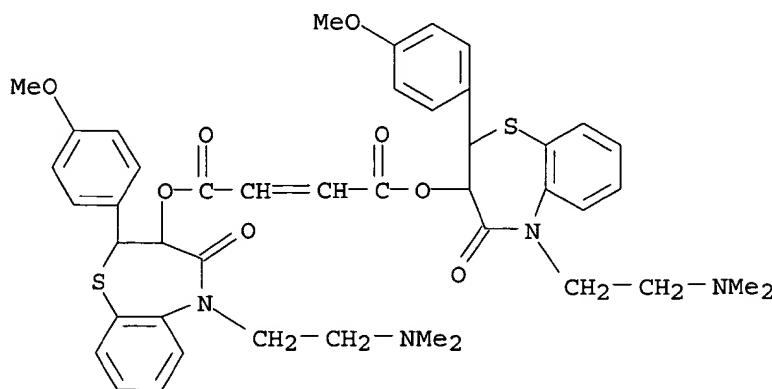
L4 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2002 ACS
 IT 140382-43-0P 140382-44-1P 140382-45-2P 140461-00-3P
 140461-01-4P
 RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn. of, as vasodilator)

RN 140382-43-0 CAPLUS

CN 2-Butenedioic acid (2E)-,

bis[(2R,3R)-5-[2-(dimethylamino)ethyl]-2,3,4,5-tetrahydro-2-(4-methoxyphenyl)-4-oxo-1,5-benzothiazepin-3-yl] ester, rel- (9CI) (CA INDEX NAME)

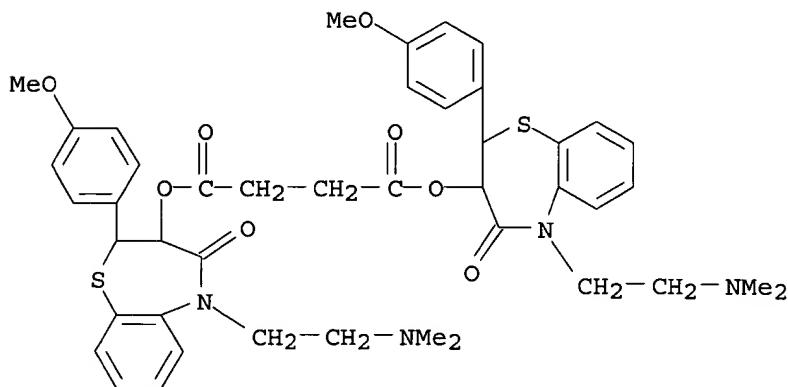


RN 140382-44-1 CAPLUS

CN Butanedioic acid,

bis[5-[2-(dimethylamino)ethyl]-2,3,4,5-tetrahydro-2-(4-methoxyphenyl)-4-oxo-1,5-

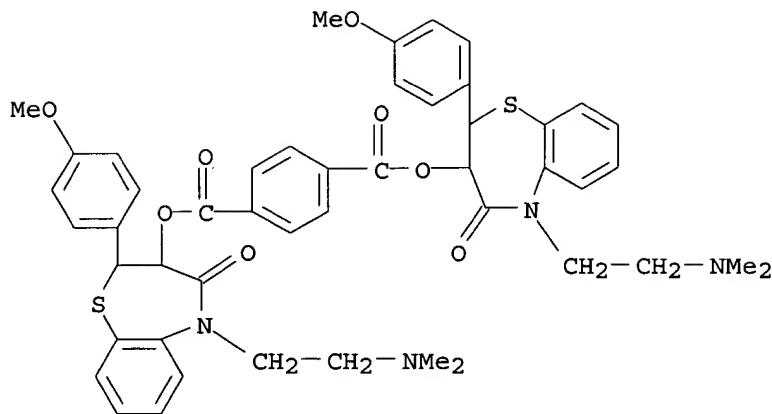
benzothiazepin-3-yl] ester, [2.alpha.,3.alpha.(2R*,3R*)]- (9CI) (CA INDEX NAME)



RN 140382-45-2 CAPLUS

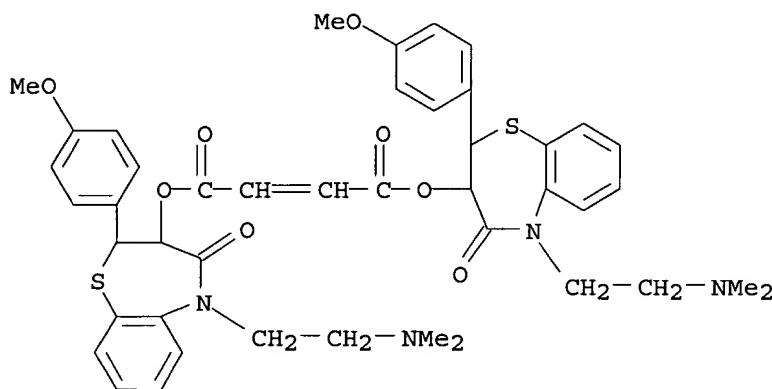
CN 1,4-Benzenediacrylic acid,

bis[5-[2-(dimethylamino)ethyl]-2,3,4,5-tetrahydro-2-(4-methoxyphenyl)-4-oxo-1,5-benzothiazepin-3-yl] ester, [2.alpha.,3.alpha.(2R*,3R*)]- (9CI) (CA INDEX NAME)



RN 140461-00-3 CAPLUS

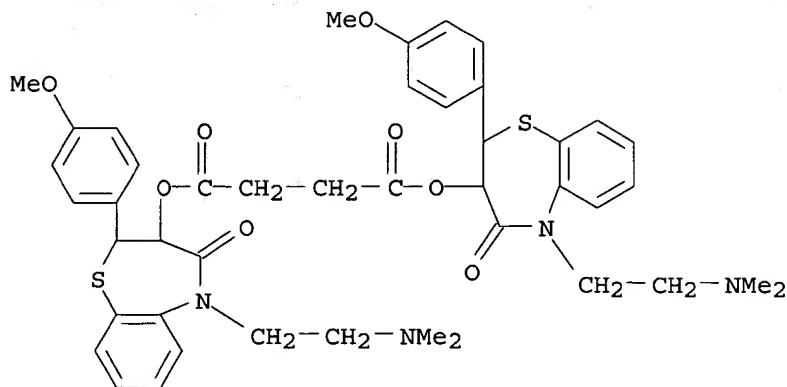
CN 2-Butenedioic acid (2E)-,
 bis[(2R,5R)-5-[2-(dimethylamino)ethyl]-2,3,4,5-tetrahydro-2-(4-methoxyphenyl)-4-oxo-1,5-benzothiazepin-3-yl] ester, dihydrochloride, rel- (9CI) (CA INDEX NAME)



●2 HCl

RN 140461-01-4 CAPLUS

CN Butanedioic acid,
 bis[5-[2-(dimethylamino)ethyl]-2,3,4,5-tetrahydro-2-(4-methoxyphenyl)-4-oxo-1,5-benzothiazepin-3-yl] ester, dihydrochloride,
 [2.alpha.,3.alpha.-(2R*,3R*)]- (9CI) (CA INDEX NAME)



●2 HCl

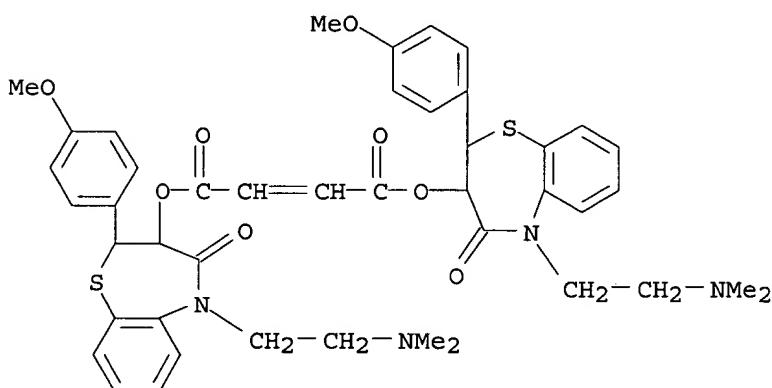
L4 ANSWER 2 OF 2 USPATFULL

IT 140382-43-0P 140382-44-1P 140382-45-2P 140461-00-3P
 140461-01-4P

(prepn. of, as vasodilator)

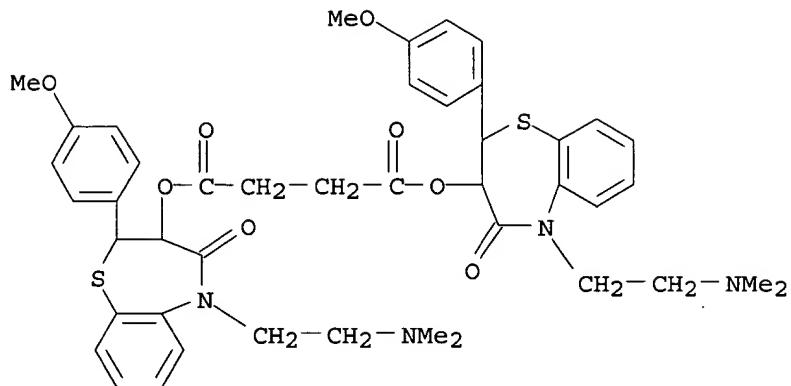
RN 140382-43-0 USPATFULL

CN 2-Butenedioic acid (2E)-,
 bis[(2R,3R)-5-[2-(dimethylamino)ethyl]-2,3,4,5-tetrahydro-2-(4-methoxyphenyl)-4-oxo-1,5-benzothiazepin-3-yl] ester, rel- (9CI) (CA INDEX NAME)



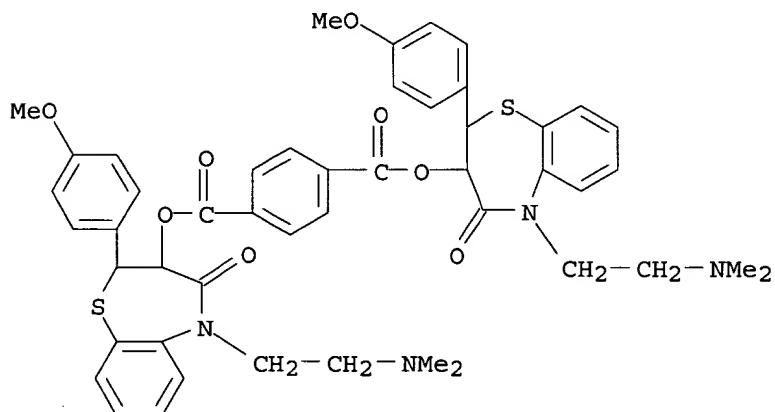
RN 140382-44-1 USPATFULL

CN Butanedioic acid,
 bis[5-[2-(dimethylamino)ethyl]-2,3,4,5-tetrahydro-2-(4-methoxyphenyl)-4-oxo-1,5-benzothiazepin-3-yl] ester, [2.alpha.,3.alpha.-(2R*,3R*)]- (9CI) (CA INDEX NAME)



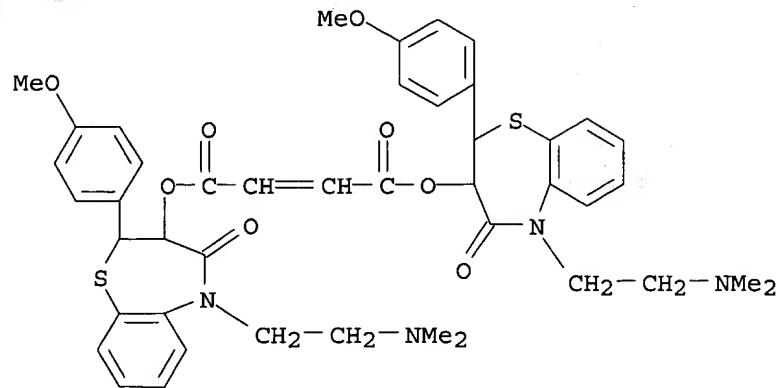
RN 140382-45-2 USPATFULL

CN 1,4-Benzenedicarboxylic acid,
bis[5-[2-(dimethylamino)ethyl]-2,3,4,5-tetrahydro-2-(4-methoxyphenyl)-4-oxo-1,5-benzothiazepin-3-yl] ester, [2.alpha.,3.alpha.-(2R*,3R*)]-
(9CI) (CA INDEX NAME)



RN 140461-00-3 USPATFULL

CN 2-Butenedioic acid (2E)-,
bis[(2R,5R)-5-[2-(dimethylamino)ethyl]-2,3,4,5-tetrahydro-2-(4-methoxyphenyl)-4-oxo-1,5-benzothiazepin-3-yl] ester, dihydrochloride, rel- (9CI) (CA
INDEX NAME)



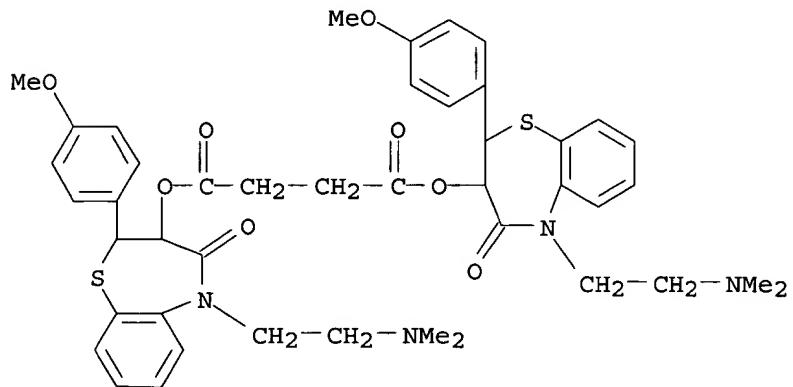
●2 HCl

RN 140461-01-4 USPATFULL

CN Butanedioic acid,

bis[5-[2-(dimethylamino)ethyl]-2,3,4,5-tetrahydro-2-(4-methoxyphenyl)-4-oxo-1,5-

benzothiazepin-3-yl] ester, dihydrochloride,
[2.alpha.,3.alpha.-(2R*,3R*)]- (9CI) (CA INDEX NAME)



●2 HCl

updated slack

=> d his

(FILE 'HOME' ENTERED AT 16:57:15 ON 22 JUL 2002)

* FILE 'CAPLUS, MEDLINE, BIOSIS, EMBASE, SCISEARCH, USPATFULL' ENTERED AT
16:57:30 ON 22 JUL 2002

L1 856 S KNORR A?/AU
L2 106 S L1 AND DIHYDRO?
L3 73 S L1 AND DIHYDROPYRIDINE
L4 3 S L3 AND LINK?
L5 33 S L3 AND DIME?
L6 1 S L3 AND (DIMER OR DIMERIC)
L7 46382 S DILTIAZEM
L8 153 S L7 AND (DIMER OR DIMERIC)
L9 9 S L7 (P) (DIMER OR DIMERIC)
L10 4 DUP REM L9 (5 DUPLICATES REMOVED)
L11 309 S L7 (P) (DIVALENT OR BIVALENT OR LINKER)
L12 29 S L7 (P) (BIVALENT OR LINKER)
L13 8 DUP REM L12 (21 DUPLICATES REMOVED)
L14 322 S L7 (P) (BIS)

=> log y